CLAIMS

1. A method for encrypted transmission of communication data streams, present as a sequence of IP data packets, via a packet-oriented communication network, comprising:

forming collective Internet Protocol data packets, each containing several Internet Protocol data packets of different communication data streams;

encrypting each collective Internet Protocol data packet by an encryption module to form encrypted collective Internet Protocol data packets; and

transmitting the encrypted collective Internet Protocol data packets via the packet-oriented communication network.

2. A method in accordance with claim 1, wherein the encrypted collective Internet Protocol data packets are transmitted by an encrypted tunneling method on a network layer of an OSI reference model.

3. A method in accordance with claim 2, wherein said forming comprises:

determining which of the different communication data streams have a common transmission destination, and

forming at least one collective Internet Protocol data packet from Internet Protocol data packets of communication data streams with a common transmission destination.

4. A method in accordance with claim 3, wherein said determining and forming are performed on the Internet Protocol data packets of the different communication data streams that occur within a specified time interval.

5. A transmission device for encrypted transmission of communication data steams present in each case as a sequence of Internet Protocol data packets via a packet-oriented communication network, comprising:

a collective packet generator forming collective Internet Protocol data packets, each containing several Internet Protocol data packets of different communication data streams;

an encryption module encrypting at least one of the collective Internet Protocol data packets; and

an Internet Protocol interface transmitting encrypted collective Internet Protocol data packets via the communication network.

6. A transmission device in accordance with claim 5, wherein said encryption module includes an encapsulation module encapsulating data of a first Internet Protocol data packet encrypted in the encryption module into a second Internet Protocol data packet.

7. A transmission device in accordance with claim 6, wherein said collective packet generator comprises:

an address comparison device determining which of the different communication data streams have a common transmission destination; and

a collective packet generation device forming the collective Internet Protocol data packets, each containing Internet Protocol data packets of the different communication data streams having the common transmission destination.

8. A transmission device in accordance with claim 7, further comprising a timer for setting a time interval, with the Internet Protocol data packets of the different communication data streams that occur within the time interval being combined to form a collective Internet Protocol data packet.